

## BIBLIOGRAPHY

C. FITZHUGH TALMAN, *in charge of Library*

## RECENT ADDITIONS

The following have been selected from among the titles of books recently received as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies:

## American national red cross

Hurricane disasters of August and September 1933. Washington. 1934. 41 p. illus. tables. 23 cm.

## Hettner, Alfred

Vergleichende Länderkunde. Leipzig und Berlin, B. G. Teubner, 1933-34. Band III. "Die Gewässer des Festlandes. Die Klimate der Erde." illus. (incl. maps), diagrs. 23½ cm.

## Ridgley, Douglas Clay

Rainfall of the earth. Bloomington, Ill., McKnight & McKnight, 1933. 47 p. illus. 19½ cm. (Important topics in geography.)

## Shaw, Sir William Napier

The drama of weather. New York, The Macmillan company; Cambridge, England, The University press, 1933. xiv, 269 p. front., illus. (incl. charts), diagrs. 21 cm. Printed in Great Britain.

## Smythe, Francis Sydney

Climbs and ski runs; mountaineering and skiing in the Alps, Great Britain and Corsica, with a foreword by Geoffrey Winthrop Young. Edinburgh and London, W. Blackwood & sons, ltd., 1933. xx, 307 p. front., plates (1 fold.) 22 cm. "First printed October 1929 ... reprinted August 1933."

## Somme. Commission météorologique

Bulletin de la Commission météorologique du département de la Somme [France]. Année 1923-32. Amiens. 1924-33.

## Tannehill, Ivan Ray

The hurricane. Washington, U. S. Government printing office, 1934. 14 p. maps, diagrs. 28 cm. (U. S. Dept. of agriculture. Miscellaneous publication no. 197.) Contribution from Weather bureau.

## U. S. Lake survey

Bulletin no. 43. Survey of northern and northwestern lakes. Detroit, U. S. Lake survey office, 1934. 482 p. fold. tables. 25½ cm.

## U. S. Weather bureau

Weather code for West Indian stations. 1934. Washington, D. C. Weather bureau. 1934. 11 p. tables. 29½ cm. (Mimeographed.)

## U. S. Weather bureau

Weather code for West Indian and Caribbean Sea observers. Washington, D. C. 1917. 32 p. 29½ cm.

## SOLAR OBSERVATIONS

SOLAR RADIATION MEASUREMENTS DURING  
DECEMBER 1934

By IRVING F. HAND, Assistant in Solar Radiation Investigations

For a description of instruments employed and their exposures, the reader is referred to the January 1932 REVIEW, page 26.

Table 1 shows that solar radiation intensities at normal incidence averaged above normal for December at Washington and Madison, and close to normal at Lincoln.

Table 2 shows an excess in the total solar and sky radiation received on a horizontal surface at Chicago, New York, Twin Falls, Miami, and New Orleans, and a deficiency at all other stations for which normals have been computed. A marked excess of radiation for the year was received at all stations with the exception of Pittsburgh, which was close to normal, and Madison and Miami, both of which were considerably below normal.

The December turbidity measurements at Washington are noteworthy because of the large water-vapor content on all clear days except the 12th.

Polarization measurements obtained at 5 days at Washington give a mean of 54 percent with a maximum of 64 percent on the 5th. Both of these values are close to their respective December normals. No polarization readings were made at Madison owing to continuous snow and ice coverage.

TABLE 1.—Solar radiation intensities during December 1934

(Gram-calories per minute per square centimeter of normal surface)

WASHINGTON, D. C.												
Date	Sun's zenith distance										Local mean solar time	
	8 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°		
	75th mer. time	Air mass										
		A. M.					P. M.					
		e	5.0	4.0	3.0	2.0	* 1.0	2.0	3.0	4.0		5.0
Dec. 5.	<i>mm</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>mm</i>	
Dec. 11.	2.74				1.36			1.20	1.03	0.92	2.74	
Dec. 12.	1.88				1.20						1.88	
Dec. 14.	1.68			1.03							1.78	
Dec. 15.	2.36	0.92	0.98	1.05	1.30			1.20	1.08	1.01	2.36	
Dec. 18.	2.87	.71	.88	.99							2.62	
Dec. 18.	3.00	1.01	1.12	1.17	1.21			(1.20)	(1.06)	(.96)	3.00	
Means	.88	.99	1.06	1.24				(1.20)	(1.06)	(.96)		
Departures.	+ .09	+ .08	+ .01	+ .00				+ .16	+ .15	+ .16		

TABLE 1.—Solar radiation intensities during December 1934—Con.

(Gram-calories per minute per square centimeter of normal surface)

## MADISON, WIS.

Date	Sun's zenith distance										Local mean solar time	
	8 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°		
	75th mer. time	Air mass										
		A. M.					P. M.					
		e	5.0	4.0	3.0	2.0	• 1.0	2.0	3.0	4.0		5.0
Dec. 6	<i>mm</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>cal.</i>	<i>mm</i>	
Dec. 7	1.68							1.31			1.88	
Dec. 10	1.37		1.20	1.34							1.52	
Dec. 11	1.96	1.16	1.22	1.34							1.60	
Dec. 13	1.88	1.04		1.15							1.45	
Dec. 17	2.36							1.30			2.87	
Dec. 26	2.87							1.10			2.49	
Dec. 26	.66			1.38							.51	
Means		(1.16)	(1.21)	1.30				1.24				
Departures		+ .20	+ .12	+ .08				+ .01				

## LINCOLN, NEBR.

Date	8 a. m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	Local mean solar time
Dec. 3.....	2.26							1.25			2.36
Dec. 4.....	2.26	1.03	1.14	1.30				1.23	1.19	1.08	2.87
Dec. 7.....	.96							1.26	1.12	1.01	1.19
Dec. 11.....	1.02							1.21	1.04	.97	2.62
Dec. 12.....	3.00	1.06	1.15	1.28				1.20	1.00		4.17
Dec. 15.....	4.37			1.02				1.20	1.08	.95	5.16
Dec. 19.....	1.96	1.13	1.21	1.34				1.15			2.36
Dec. 20.....	3.81	.81	1.00	1.20							4.37
Dec. 26.....	.48	.92	1.07	1.23				1.07			4.17
Dec. 27.....	2.36	.66	.86	1.09				1.10	.96	.82	3.81
Means.....	.94	1.07	1.21					1.19	1.06	.97	
Departures..	+ .01	+ .01	-.01					-.01	-.01	+ .01	

## BLUE HILL, MASS.

Dec. 2.....	3.3					1.25	1.04	0.95	0.83	3.5
Dec. 3.....	3.2	1.00	1.10	1.23						2.2
Dec. 4.....	6.5			1.07						6.5
Dec. 5.....	2.9		1.08	1.23	1.42		1.19			2.3
Dec. 8.....	1.2			1.20	1.32					1.1
Dec. 9.....	1.0			1.31	1.42		1.27			1.1
Dec. 11.....	1.0	1.01	1.12	1.24	1.36		1.24			1.0
Dec. 12.....	1.3		1.22	1.31	1.42		1.22			1.3
Dec. 14.....	1.3		1.20	1.29	1.44		1.24			2.1
Dec. 15.....	1.0		1.23	1.33	1.45		1.28			1.0
Dec. 18.....	1.2		1.26	1.35	1.40		1.31			1.3
Dec. 20.....	3.5			1.06	1.28		1.23		1.02	2.6
Dec. 27.....	.6	1.18	1.20	1.27	1.42		1.27			.6
Dec. 30.....	1.0	1.06	1.16	1.28	1.45		1.32			1.1
Dec. 31.....	1.0	1.12	1.27	1.35	1.46		1.31			.7
Means.....		1.07	1.18	1.25	1.40	(1.25)	1.24	(.95)	(.92)	

• Extrapolated.